"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515130007-9 APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515130007-9"

#### GINZBURG, V.I.

Photogalvanographic method for the reproduction of images on copper surfaces coated with oxide films. Zhur.nauch. 1 prikl.fot. 1 kin. 9 no.6:451-457 N-D 164. (MIRA 18:1)

1. Vsescyuznyy nauchno-issledovateliskiy institut poligraficheskcy promyshlennosti.

GINZBURG, V.1.

Surface superconducttvity. Phur. sksp. 1 tear. 1.2. 1 00. 1.2.200-2320 D \*64. (SIRV 18:2)

1. Pizicheskly institut imen; lebedeva AN NOOR.

GINZBURG, V.I.

Photoelectric method for producing bimetallic images and offset printing plates. Zhur.nauch.i prikl.fot. i kin. 10 no.3:174-178 My-Je '65. (MIRA 18:11)

1. Vsesoyuznyy nauchno-icsledovatel'skiy institut poligraficheskoy promyshlennosti.

GINZBURG, V.L.

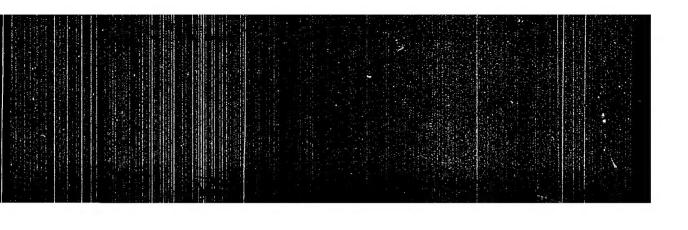
Captive air tires. Kauch. i res. 16 no.2:37 F 157. (MIRA 12:3) (United States-Automobiles--Tires)

Conveyer belt with a zipper featener (from "Gummi u.Asbest," 10 no.2 1956). Kauch.i rez. 16 no.5:39-40 My '57. (MIRA 10:7) (Belts and belting)

#### GINZBURG, V.L.; ROTLEDER, V.M.

Review of foreign patents of type "RS" tires. Kauch.i rez. 22 no.2:36-38 F '63. (MIRA 16:2)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti. (Tires, Rubber-Patents)



WINZburg, V.L.

Category: USSR/Analytical Chemistry - General Questions.

G-1

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30945

Author : Ginzburg V. L., Alekseyenko Ye. F., Belokrinitskaya Ye. Ye.,

Vitushkina T. N., Ineshina F. M.

Inst : not given

: Accuracy of Photographic Methods of Spectral Analysis Title

Orig Pub: Zavod. laboratoriya, 1956, 22, No 11, 1331-1333

Abstract: A comparison was made of the accuracy of analyses of fused nickel, copper regulus, fused cobalt and cathodic nickel, according to calibration graphs in \( \Delta \) S, lg C coordinates, and in accordance with the solid graph method. Determinations were made of Cu, Fe, Au, Pt, Pd, Ni, Si, Mn, Pb, Sb, Bi, Sn, Co, at concentrations from several thousandth to decimal fractions of one percent, with spectrum excitation in arc discharge of direct and alternating current, and photographic recording on plates of type I, II and III. In most instances no substantial differences were found in the magnitude of errors with different calibration graphs.

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CIA-RDP86-00513R000515130007-9

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USSR/Optics - Optical Methods of Analysis. Instruments.

. Analysis: Instruments:

K-7

Abs Jour : Referat Zhur - Fizika, No 3, 1957, 7962

Author : Vitushkina, I.N., Gingburg, V.L.

Inst : Noril'sk Mining and Metallurgical Combine, USSR.

Title : Spectral Analysis of Nickel in Low-Voltage Spark Using

Cast Electrodes.

Orig Pubq : Zavod. laboratoriya, 1956, 22, No 4, 438-440

Abstract : In the determination of copper and iron admixtures in

pure nickel, the spectrum is excited by a DG-1 generator, operating in the spark mode (current 2 -- 2.5 amp).

The analytic pairs of lines are Cu 3273.96 -- Ni 3286.95 A and Fe 2599.40/57 -- N 2551.01 A. The inter-

val of the determined concentrations of copper and

iron is 0.01 -- 0.5%.

The mean arithmetic error of the determination ranges

from 5 to 9%.

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- 105 -

AUTHORS:

Nedler, V.V., Ginzburg, V.L.

32-24-4-64/67

TITLE:

The Third Conference of Spectroscopy Analysts of Nonferrous Metallurgy (Tret'ye soveshchaniye spektroskopistov-analitikov tsvetnov metallurgii)

PERIODICAL:

Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 4, pp. 507-508 (USSR)

ABSTRACT:

The above mentioned conference took place at Moscow from November 15 to November 20, 1957; it was called by the Scientific-Technical Society of Nonferrous Metallurgy, and was attended by 255 representatives of 175 organizations. The contributions made by I.E. Britske (Gintsvetmet, Moscow) and N.S. Poluektova (Ukrgiredmet, Odessa) dealt with questions of flame photometry. The report delivered by L.I. Kononenko dealt with the method of determining zirconium, hafnium, molybdenum and vanadium. An interesting contribution was made by Ya.D. Raykhbaum, Ye.S.Kostyukova, and V.D. Malykh (Irgiredmet, Irkutsk) under the title "On some Causes of the Influence Exercised by Chemical Composition on the Results of Ore Analyses". A detailed report by N.A. Makulova (Giprotsvetmetobrabotka, Moscow) dealt with investigations of the rule governing the transition of test material to the emission

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The Third Conference of Spectroscopy Analysts of Nonferrous Metallurgy

32-24-4-64/67

oloud. A.A.Frishberg and V.V. Nedler (Nigrizoloto, Moscow) spoke about problems of the physical-chemical theory in connection with chemical reactions during the formation of volatile compounds in the electric arc. V.L. Ginzburg (Noril'skiy Combine) gave a report on the development of a method of determining the temperature intensity of electrodes. The following contributions dealing with special methods of spectral analysis deserve mentioning: The reports by D.M. Shvarts, L.N. Kaporskiy and V.V. Portnova (Gipronikel', Leningrad) and I.S. Nilova (Severonikel', Monchegorsk), which deal with the analysis of zino, thallium and antimony; the reports by S.M. Solodowski (Giredmet, Moscow) and others on the analysis of silicon, silicon dioxide and silicio acid; the reports by V.P. Khrapay and G.M. Gusev on the increase of sensitivity in determinations of microadmixtures in silver; the contributions made by N.A. Sin'kov and D.M. Livshits (Noril'sk Combine) deal with the analysis of solutions containing platinum metals. The report delivered by V.O. Khandros and L.N.Filimonov (Giprotavetmetobrabotka) deals with the problems of the application of quantometers. A.G. Krest yaninov, Yu.I. Stakheyev and Ya.D.Raykhbaum (Irgiredmet) were the first to use photoelectric apparatus for the

Card 2/3

The Third Conference of Spectroscopy Analysts of Nonferrous Metallurgy

32-24-4-64/67

direct analysis of ores for lithium. The contribution made by V.V.Nedler dealt with attempts made at using the horizontal electric arc, stabilized by an air current. The reports concerning standards published by the institutes Gintsvetmet, Giprotsvetmetobrabotka, VIAM (all at Moscow), TaNIIolovo (Novosibirsk), Irgiredmet (Irkutsk), Gipronikel' (Leningrad), VNIItsvetmet (Ust'-Kamenogorsk), Ukrgiredmet (Odessa) confirm the work performed by these institutes during recent years. The necessity of centralizing the publishing of standards was stressed, and the industrial production of high-quality spectral carbons and an increased distribution of ordinary spectral carbons was urgently demanded.

1. Metallurgy--USSR 2. Spectroscopy--USSR

Card 3/3

The control of the co	•	:	APP	PROV	/ED EOI	KARELI RELE	ASE: TH	hlyrsday, Sept nursday, Sept	ember 2	26, 2002 6, 2002	CIA-I	RDP86-	-0051 00513	.3R0005	515130 15130	0007-9	9	3	1/4	
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"Spectral Method of Analysis of Technical Tellurium in Noble Metals."

paper submitted to the Fifth Conference on the Analysis of Nobel Metals, Novosibirsk, 20-23 September 1960

So: Zhurnal analiticheskoy khimii, Vol XVI, No 1, 1961, page 119

GINZBURG, V.L.; ROGOVER, G.B.

Regularities in the distribution of nonferrous and noble metals in the predominant ore minerals and silicates of the Noril'sk deposit. Sov. geol. 3 no.3:48-60 Mr 160. (MIRA 13:11)

l. Ministerstva geologii i okhrany nedr SSSR.
(Noril'sk region--Hetals)

S/032/60/026/05/18/063 B010/B005

AUTHORS:

Ginzburg, V. L., Glukhovetskaya, N. P.

TITLE:

Determination of Silicon and Other Impurities in Selenium

PERIODICAL:

Zavodskaya laboratoriya, 1960, Vol. 26, No. 5, pp. 559-561

TEXT: N. N. Danilova and L. A. Lerner collaborated in the experimental part of the present investigation. A spectrum analysis for determining impurities in selenium was worked out. The calibration samples used were produced by fusing together Si and Se; less Si was used than corresponds to the stoichiometric ratio in the compound SiSe2. Thus, it was possible to obtain a chemically stable mixture of SiSe2 and Se. By increasing the addition of Se, a series of calibration samples was produced up to a addition of Se, a series of carroration samples was produced up to a Si content of 2.10-4%. Silicon was determined according to the following spectral lines: Si 2516.12A (from 1.10-4 to 3.10-3% of Si), Si 2881.58A spectral lines: Si 2516.12A (from 1.10-4 to 3.10-3% of Si), (from 2.10-4 to 2.10-2% of Si), Si 2514.33A (from 1.10-5 to 5.10-2% of Si), (from 1.10-5 to 3.10-1% of Si). The calibration samples for Si 2435.16A (from 1.10-2 to 3.10-1% of Si). determining the other impurities in selenium were also prepared by fusing together the initial alloy with pure selenium. The initial alloy was

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Determination of Silicon and Other Impurities in Selenium

S/032/60/026/05/18/063 B010/B005

produced at the institut "Gintsvetmet" ("Gintsvetmet" Institute), and contained 1% each of Cu, Pb, Mg, Al, Ag, As, Fe, Sb. Ni, Bi, Te, as well as the selenides of Cd, Hg, Sn, Cu, Ni, and/or their melts with selenium. The samples, as well as the calibration samples, were granulated and fused into the crater of the carbon electrode (Fig. 2). There are 2 figures and 4 non-Soviet references.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S.

Kurnakova Akademii nauk SSSR (Institute of General and
Inorganic Chemistry imeni N. S. Kurnakov of the Academy
of Sciences, USSR)

## SVESHNIKOVA, V.N.; GINZBURG, V.L.

Study of the ternary system consisting of cerium phosphate phosphoric acid - water at 70°C. Zhur.neorg.khim. 7 no.5:
1169-1173 My '62. (MIRA 15:7)
(Cerium phosphate) (Phosphoric acid)

(out run buosburges) (thosphorte sera)

GINZBURG, V.L.; GLUKHOVETSKAYA, N.P.

Spectral line intensity as a function of the effective ionization potential of an electric arc. Opt. i spektr. 12 no.3:344-349 Mr '62. (MIRA 15:3) (Spectrum analysis) (Electric arc) (Plasma (Ionized gases))

## GINZBURG, V. L.; GLUKHOVETSKAYA, N. P.

Note on 0, P. Semenova and M. A. Levchenko's article "Dependence of the effective ionization potential on the concentration of readily ionizable impurities in an arc discharge." Opt. 1 spektr. 13 no.6:881-882 D'62. (MIRA 16:1)

(Electric discharges) (Ionization)

## \$/075/62/017/009/005/006 E071/E436

AUTHORS: Ginzburg, V.L., Glukhovetskaya, N.P., Danilova, N.N.

TITLE: A spectrochemical method for the determination of

impurities in selenium

PERIODICAL: Zhurnal analiticheskoy khimii, v.17, no.9, 1962, 1096-1100

TEXT: A method of determination of small amounts of impurities by their preliminary concentration and subsequent spectral analysis is proposed. The concentration is carried out by distilling a sample of selenium placed on a powdered carbon support at 315°C in a stream of nitrogen oxides. Selenium distils off in the form of SeO2 while impurities remain in the carbon powder which is then submitted to spectral analysis on carbon electrodes. To increase the sensitivity of the determination of impurities in carbon powder, sodium chloride (0.6%) or potassium chloride (0.3%) are added to the concentrates. The degree of recovery of various elements in the concentrates was tested. According to the degree of recovery the elements were divided into three groups: 1) 70 to 80%, Au, Mg, Sn, Sb, Bi, Te, Al, Cu, Ag; 2) 40 to 50% Cd, As, Fe, Pb, Ti, Mn; Card 1/2

A spectrochemical method ...

s/075/62/017/009/005/006 E071/E436

3) 20% Cr and Ni. For the elements of the 3rd group, the method cannot be used. There are 4 figures and 1 table.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova AN SSSR Moskva (Institute of General and Inorganic Chemistry imeni N.S. Kurnakov AS USSR, SUBMITTED:

November 20, 1961

Card 2/2

RELEASE: Thursday, September 26, 2002 ROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R00051513007796/012/025 CIA-RDP86-00513R00051513007796/012/025 B101/B138

AUTHORS:

Ginzburg, V. L., Glukhovetskaya, N. P., and Lerner, L. A. Increasing the sensitivity of the spectral determination of

impurities in selenium

Zavodskaya laboratoriya, v. 28, no. 6, 1962, 682 - 684 TEXT: By adding NaCl (ionization potential V<sub>1</sub> = 5.1 ev), the V<sub>1</sub> eff of TITLE PERIODICAL:

the arc plasma may be controlled in such a way that the sensitivity of the impurity determination is increased considerably the arc plasma may be controlled in such a way that the sensitivity of the impurity determination is increased considerably. Calibration curves As against log C were plotted for selection samples with impurity standards. impurity determination is increased considerably. Calloration curves in against log C were plotted for selenium samples with impurity standards in against 106 C were plotted for setenium samples with impurity standards the presence of carbon powder containing various NaCl additions in the the presence of carbon powder containing various NaUl additions in the counterelectrode. The dependence of the intensity of the spectral lines on V counterelectrode. The dependence of the intensity of the spectral lines on Vi eff (-2 rd, Necl) was the optimum who consists the intensity of the spectral lines on Vi eff (-2 rd, Necl) was the optimum who consists the intensity of the spectral lines on Vi eff (-2 rd, Necl) was the optimum who consists the intensity of the spectral lines on Vi eff (-2 rd, Necl) was the optimum who consists the intensity of the spectral lines on Vi eff (-2 rd, Necl) was the optimum who consists the intensity of the spectral lines on Vi eff (-2 rd, Necl) was the optimum who consists the intensity of the spectral lines on Vi eff (-2 rd, Necl) was the optimum who consists the intensity of the spectral lines on Vi eff (-2 rd, Necl) was the optimum who consists the intensity of the spectral lines on Vi eff (-2 rd, Necl) was the optimum who consists the intensity of the spectral lines on Vi eff (-2 rd, Necl) was the optimum who consists the intensity of the spectral lines of the optimum who consists the op with 1% Na (= 2.7% NEUL), was the optimum. The Bensitivity increase, For the elements from the ratio \(\Delta C \) without NaCl \(\Cappa \) NaCl \(\Delta C \) was from the ratio \(\Delta C \) without NaCl \(\Delta C \) was from the ratio \(\Delta C \) without NaCl \(\Delta C \) was from the ratio \(\Delta C \) without NaCl \(\Delta C \) was from the ratio \(\Delta C \) without NaCl \(\Delta C \) was from the ratio \(\Delta C investigated, the following AC values were found:

O. 50: Cd O. XO. No. 5. O. Ni. 2.2. Al 5. 5. All 5. 6. All 5. All 5. 6. All 5. with 1% Na (= 2.5% NaCl), was the optimum, investigated, the following AC values were lound: Te 0.40; Hg 0.20; AB 0.50; Cd 0.30; Mg 5.0; Ni 2.2; Al 5.5; Au 5.0; Pb 4.0; Bi 2.5; Cu 5.0; Ti 50;

Card 1/2

Increasing the sensitivity ...

5/032/62/028/006/012/025 B101/B138

Sb 1.0. The brightness of the Cd, Hg, Te, and As lines is not increased when reducing the selenium arc temperature because of the high ionization potential of these elements  $(V_i \geqslant 8.6 \text{ ev})$ . There are 2 figures and 1 table.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganio Chemistry imeni N. S. Kurnakov of the Academy of Sciences USSR)

Card 2/2

# GINZBURG, V.L., GLUKHOVETSKAYA, N.P., LERNER, L.A.

Fluorination of samples in spectral analysis. Zav. lab. 29 no.6:684-685 '63. (MIRA 16:6)

1. Institut obshchey i neorganicheskoy khimii imeni N.S. Kurnakova AN SSSR.

(Spectrum analysis) (Fluorination)

Determination of silver, gold, palladium, platinum, and rhodium by atomic absorption flame spectrophotometry. Zhur.anal.khim. 19 no.9: 1089-1093 \*64. (MIRA 17:10)

l. Konstruktorskeye byuro "TSvetme avtematika" i TSentral nyy nauchno-issledovatel skiy gornorazvedochnyy institut, Moskva.

"APPROVED FOR RELEASE: Thursday, September 26, 2002 APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515130007-9" GINZBURG, Value, OLEMON, I.M.

Gravitational collegee of a magnetic ster. Thur, exap. 1 1007. fiz. 47 no.3:1030-1040 5 164. (MSF 17:1)

1. Pizicheskiy institut imeni Lebedeva AV FLUR.

GINZBURG, Value MOTHLEVICH, C.P., PITAYEVEKIY, L.P.

Optical properties of polyvalent metals and electron interaction.

Dokl. AN SSSR 163 no.6:1352-1355 Ag \*65.

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR i Institut fizicheskikh problem AN SSSR. 2. Chlen-korrespondent AN SSSR (for Ginzburg).

L 1250 Geroup For Richard Francisco, September 26, 2002 CIA ROPRE-00513R000515130007-9

ACC NB AP6002686 SOURCE GOOK! UK/0033/63/042/006/1129/11/A

AUTHOR: Ginzburg, V. L.:

ORG: Institute of Physics of the Ausdamy of Sciences, 858R (Fisicheskiy institut im Lebedeva Akademii nauk 858k)

TITLE: Cosmic rays and plasms phenomena in the Galaxy and the Hetagalaxy

SOURCE: Astronomichankiy zhurnal, v. 42, no. 6, 1965, 1129-1134

TOPIC TAGS: cosmic ray, metagalaxy, space, magnetic field, anisotropic pressure, galaxy plasms, adiabatic invariant commichant, ray, onicotopy, rangel plasms.

ABSTRACT: It has been generally held that in metagalactic space no anisotropy

ABSTRACT: It has been generally held that in metagalactic space us anisotropy of cosmic rays can exist because the magnetic field of this space is unable to offset the anisotropic pressure of cosmic rays. This, however, has not been borne out by calculations. The problem of anisotropy of cosmic rays and the transition space between a galaxy and the Metagalaxy is considered to be unsolved. V. L. Ginzburg hypothesized that the unsolved problems of cosmic rays are associated with plasma effects in space, especially with cluster and other instabilities in rarified plasma. The transition of the asgnetic field from galaxy to metagalactic space occurs smoothly without hindrances. In moving under such conditions, anisotropic cosmic rays preserve the adiabatic invariant and form clusters in the Metagalaxy. The clusters move along magnetic force lines and become unstable, generating their own waves. Instability of the cluster causes turbulent motion in the plasma and Cord 1/2

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L 15889-66 BIT (1) /BIT (a) /T/ENP(4)

ACC NR: AT6002491

SOURCE CODE: UR/0000/65/000/000/0001/0009

AUTHOR: Ginaburg, V. Motulavich, C. P.; Pitayevskiy, L. P.

Physics Institute im. P. H. Lebedev (Fizicheskiy institut)

TITIE: Optical properties of polyvalent metals and interelectronic interaction

SOURCE: AN SSER, Pisicheskiy institut. Doklady, 1965. Opticheskiye svoystva polivalentnykh metallov i mezhduelektronnoye vzaimodeystviye, 1-9

TOPIC TASS: electron, gold, aluminum, tin, lead, electron interaction, metal crystal, permittivity, absorption band

ABSTRACT: In polyvalent metals (Al, Sn, Pb), on the one hand, the approximation of weakly bound electrons is adequate, but on the other hand, the concentration of optical electrons Hapt is much lower than that of valence electrons Hysl (by definition, North figures in the expression for the permittivity ( 4 27 optical frequencies whying outside the absorption hand). This was difference can be explained by the influence of interelectronic interaction, since in the theory of the Fermi liquis for crystalline metals Nort # Nval. At the same time for liquid metals, the equality work. Nval should take place, and this is indeed observed in practice. Anthors are grateful to M. Ya. Asbel' and D. Pays for liquid and process of the same time. "APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515130007-9 APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515130007-9"

GINZBURG, V.L.

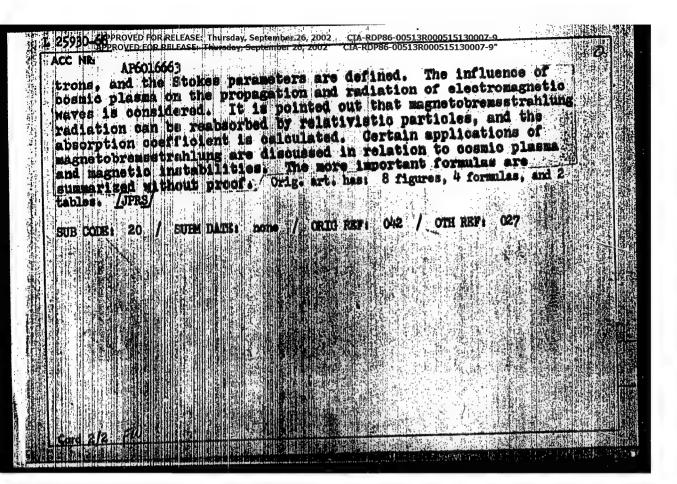
Commic rays and plasma phenomena in the ralaxy and metagalaxy.

Astron. zhur. 48 no.6:1129-1134 K-D \*65. (MIRA 19:1)

1. Fizicheskiy institut im. Lebedeva AN SECR. Submitted April 29, 1905.

OR RELANDING HISTORY September 26 1897 CA ADP66-00513R000515130007-9 STREET, CANEL AP6016663 WITHOR Ginsburg, V. L.: Sprovatakiy, S. I. ORG: none TITLE: Commo regretourementrahling (synchrotron) radiation SOURCE: Uspeldil Pisicheskikh nauk, v. 87. no. 1, 1965, 65-111 TOPIC TAGS: bromsstrehlung, counts rediction, particle acceleration, relativistic particle Magnistouromestrahlung theory is reviewed and its role ABSTRACT: Naghetobromestrantung theory to in radioastronomy and astrophysics is described. All of the necessary details are given for the application of the theory to

astrophysical problems. Magnetobremsstrahlung is rather widespread in space: cosmic radio-radiation in most cases has magne-tobremsetrablums characteristics. This holds for the overall galactic radio-radiation, as well as for that from supernova, primary and radio galaxies, etc. Magnetobremsstrahlung is highly important in the study of the origin of cosmic rays and gamma- and k-ray astronomy. The nature of electromagnetic radiation from accelerating nonrelativistic and super-relativistic particles is listussed, and formulas are derived for individual electrons. This is compared with magnetobremsstrahlung from groups of elec-UDC: 523,165



L 25772 ABCOLONG AS ASSET Thursday, September 26, 2002 CIA-RDPSG-00513R000515130007-9

ACC NR. AP6016375 SOURCE CODE: UR/OOA8/65/029/010/1825/1829

AUTHOR: Ginzburg, V. L.; Oternoy, L. M.; Syrovatskiy, S. I. 8

CRG: Physics Institute im. P. N. Lebedev, AN SSSR (Fisicheskiy institut AN SSSR)

TITLE: Relativistic electrons in the MS2 galaxy 3

SOURCE: AN SSSR. Investiya. Seriya fisicheskaya, v. 29, no. 10, 1965, 1825-1829

TOPIC TAGS: galaxy, relativistic electron, hot star, Compton effect, bremstrahlung, pi meson, nebula/M22 galaxy

ABSTRACT: The galaxy M82 (also called NGC 3034 and 3C 231), which is part of the Ursus Major group, is of special interest, since its relatively close position makes possible a comparatively delativistic development. It belongs it a special subclass of irregular galaxies that compared the monsteady-state (explosion) stage of galactic development. It belongs it a special subclass of irregular galaxies has been been assessed by an anomalously red light, high luminosity considerable quantities of dusty matter with floories abrocure, and the absence of high-luminosity hot stars. In this connection, the authors present formulas for calculating the energies and energy losses of the relativistic electrons in this galaxy particularly with respect to the total energy of the light-emitting relativistic electrons, the energy losses due

ACC NR. APCOLOTO

to the Compton effect, and the energy losses due to magnetic bremsstrahlung. It is shown that the total flux of Compton y-rays from M82 equals the Compton losses. An evaluation of the brems-strahlung flux of y-rays due to the decay of no-mesons and brems-strahlung is presented. The magnetic X-ray bremsstrahlung of M82 is evaluated on the massumption that the optical spectral index of M82 is close to the optical index (-1.5 of the Grab Nebula, which is correct only up to the frequency (-101 ops.) Orig. art. has:

12 formulas. [IPRS]

SUB (ODE: 03, 20 / SUBH DATE: none / ORIG REF: 005 / OTH REF: 012

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515130007-9 CIA-RDP86-00513R000515130007-9 SOURCE CODE: UR/0053/66/088/003/0485/0504 ACC NR. AP6023130 11.07.12% Ginsburg, V. L.; Syrovatakiy, S. I. Physics Institute im. P. N. Lebedev, AN SSSR (Fizicheskiy institut AN SSSR) Origin of cosmic rays B SOURCE: Uspekhi fisicheskikh nauk, v. 88, no. 3, 1966, 485-504 TOPIC TAUS: cosmic ray, supernova, astronomic conference, galaxy, electron spectrum ABSTRACT: It is argued that cosmic rays cannot be of metagalactic origin and that plasma effects are of fundamental importance to the further development of the astrophysics of cosmic rays; this also pertains to the quasars. According to the authors, the principal sources of cosmic rays in the Galaxy are the bursts of supernovae and possibly also explosions of the galactic nucleus. Emphasis is placed on the role of instability in the formation of the boundary of the galactic halo and in the isotropicization of the cosmic rays emerging from the Galaxy into the Metagalaxy. Allowance is made for the new knowledge that has been gained following the Jaipur Conference on Cosmic Rays in 1963. The Ninth International Conference on Cosmic Rays held in London (September 1965) is critically evaluated; at this conference no new proofs in favor of the theory of the metagalactic origin of galactic cosmic rays - unless the highest energies are concerned - were presented. It is

shown that studies of the electron spectrum provide a means of verifying the

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hypothesis that a large part of cosmic rays (or more exactly, their electron component) is generated during powerful explosions of the galactic nucleus. Any proofs refuting this hypothesis would serve as a strong argument in favor of the local metagalactic theory of the origin of cosmic rays, but no such proofs have yet been presented; nevertheless, this theory merits further discussion. Orig. art. has: 5 formulas. [JPRS]

SUB CODE: 03 / SULPH DATE: none / ORIG REF: 032 / OTH REF: 027

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will out to the other bis P. D. bebouer, At 1988 (Fizichenkly institut As 1988)

The state of the recommon from the radio granies (delivered at the Geientiffe and a color of the second and Apolica Physics, AS 8008, (v. April 1966)

Act. M: Togethi dizieheskikh mank, v. 59, no. 4, 1960, 549-562

The Market Commission and in source, galaxy, x may emission, x may astronomy

Like the last review article stimulated by recent observation of powerful x-ray acts of headpoint. It usuals with the history of x-ray acts of since the observation and the sum in 1948 and with the main receives obtained in x-ray acts of of one polary and of the metagalactic regions. The major sources of cosmic x rallation are listed and their luminosities given. The nature of the cosmic x radiation is discussed and the most important processes which can give rise to x rays are described (breasstrainly, characteristic radiation due to atomic transitions, synchrotron radiation, Compten radiation). Estimates of the relative contributions of the different mechanisms are given. Further prospects and the required apparatus are discussed in the conclusion. Orig. art. has: 2 figures and 5 formulas.

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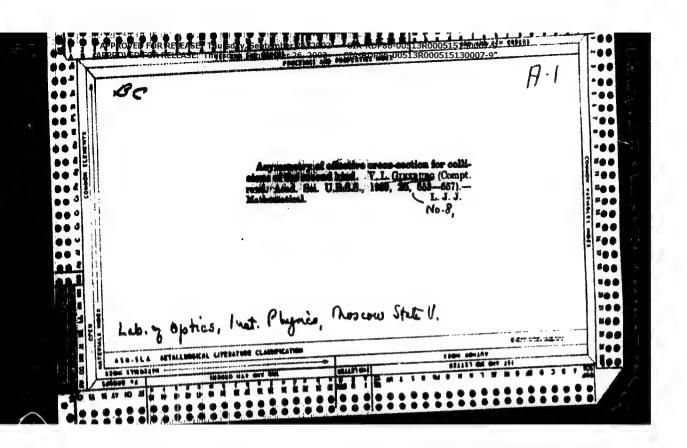
"On the Exclusion of the Longitudinal Magnetic Field from the Hamilton Function," Zhur, Eksper. i Teoret, Fiz., 9, No.8, 1939

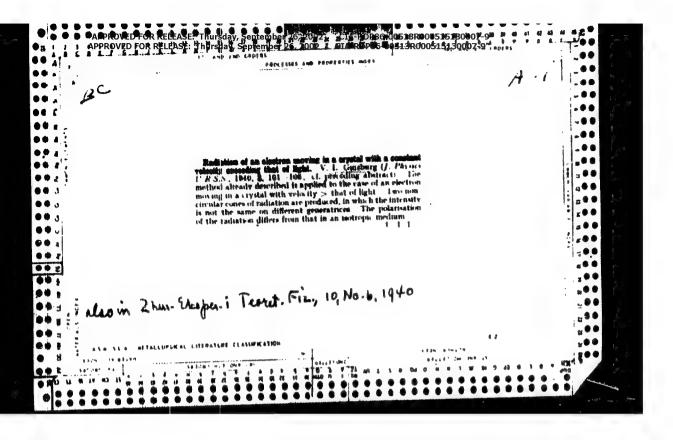
Optics Lab. and Sci. Res. Inst. of Physics, Moscow State U.

"On Quantum Electrodynamics. I," Dokl. AN SSSR, 23, No.8, 1939. "On Quantum Electrodynamics. II", Dokl. AN SSSR, 23, No.9, 1939

"Some Contribution to Quantum Electrodynamics. III," Dokl. AN SSSR, 24, No.2, 1939.

Sci. Res. Inst. Physics, Moscow State U.

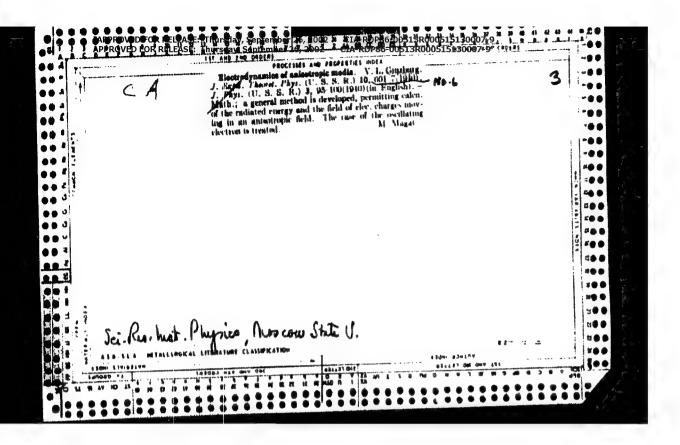


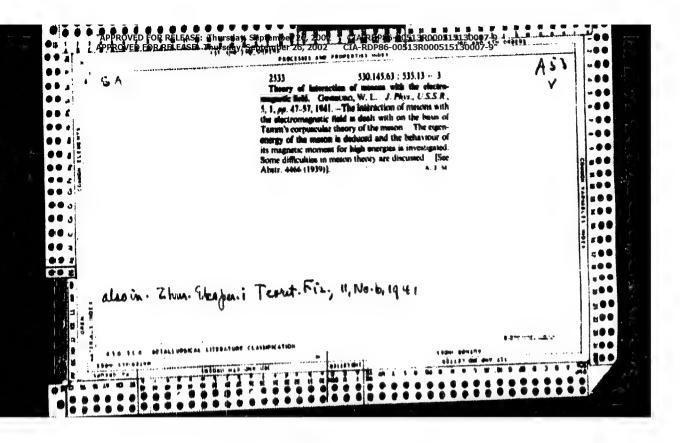


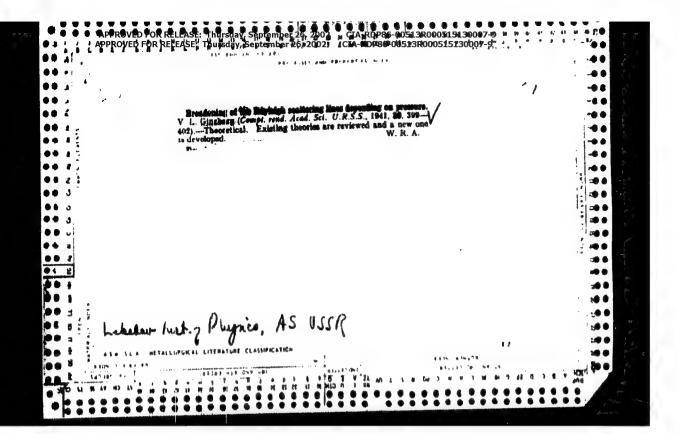
CIA-RDP86-00513R000515130007-9 CIA-RDP86-00513R000515130007-9" "APPROVED FOR RELEASE: Thursday, September 26, 2002 APPROVED FOR RELEASE: Thursday, September 26, 2002 The quantum theory of light radiation of an electron uniformly moving in a medium.

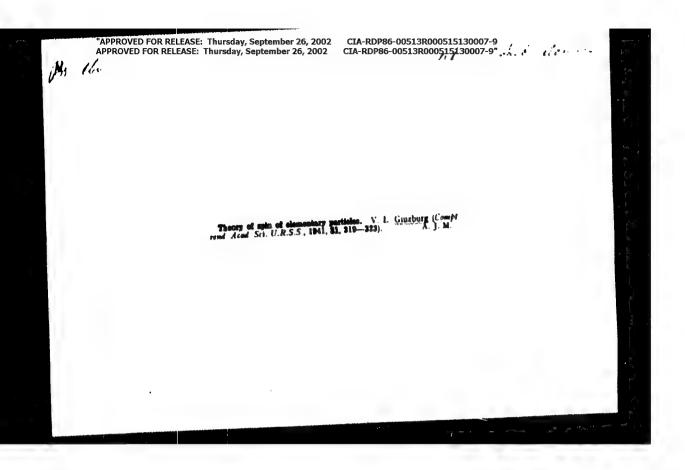
The Ginzburg. J. Expl.

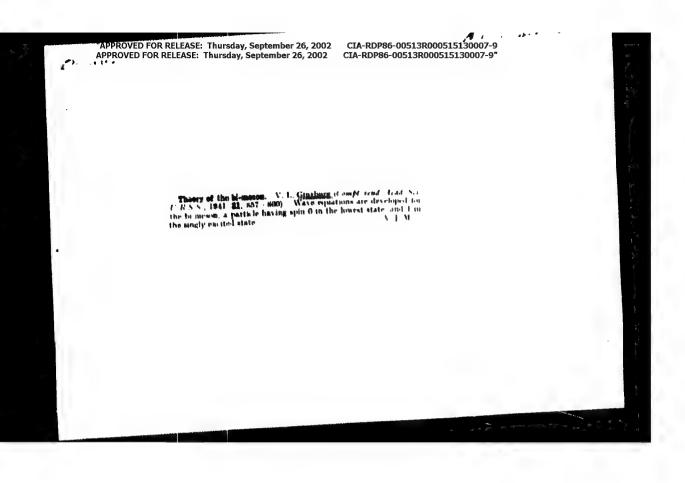
Theoret Phys. (U. S. S. R.) 10, 580 (70); J. Phys. (U. S. S. R.) 2, 441–52 (1040) (in English). Theoretical-matter of the directed radiation of light by an electron moving no medium with a velocity greater than the phase velocity of light in that unclaim is discussed from the standard of light in that unclaim is discussed from the standard of unantum. Theory. For a posingenesis, electron described by Pauli-Dirac equations. The difference is they differ considerable for a mount trivistic electron described by Pauli-Dirac equations. The difference is excited by Pauli-Dirac equations. The difference is lated to the non-inertness of the spin. In the extreme relativistic case the radiation of a Dirac electron coincide exactly with that of a classical nonmagnetic electron exactly.

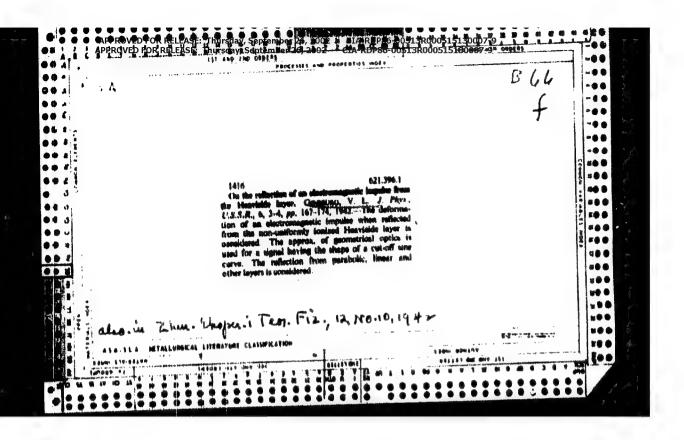


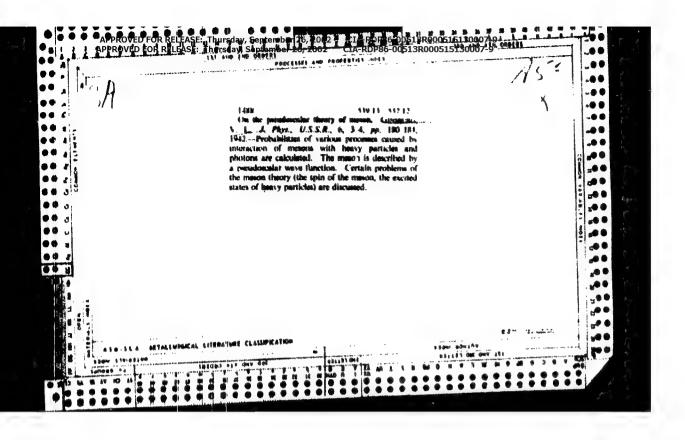












"Wave Equation for a Particle with a Spin 1/2 and with Two Values of the Rest Mass," Zhur. Eksper. i Teoret. Fiz., 12, No.10, 1942

"On the Theory of a Particle with a Spin 3/2," ibid.

Physics Inst. im. Lebedev, AS USSR

B 66

On the paramegnatic effects influencing the radio-wave propagation in the atmosphere. Ginsburg, V. L. C.R. Acad. Sci. URSS, 35, 9, pp. 270-273, 1943 - The earth's magnetic field gives rise to a double refraction and motation of the plane of polarization of radio waves in the atmosphere. In evaluating these exceffects, it is ordinarily sufficient to calculate the change in refr. index of the medium containing free electrons, which is brought about by the ragnetic field. The paper considers processes of a paramegnetic mature, depending on a constangulation moment of the atoms and molecules of gases in the atmosphere, considerations relating to the electronic stayes of molecules, atoms considerations relating to the electronic stayes of molecules, atoms and ions of Kg and Og lead to formulae from which the magnitude of the effect can be evaluated. The influence of the paramagnetic processes is insignificant.

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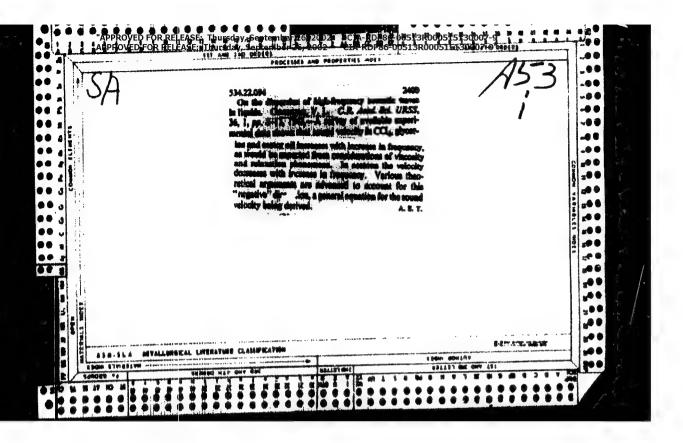
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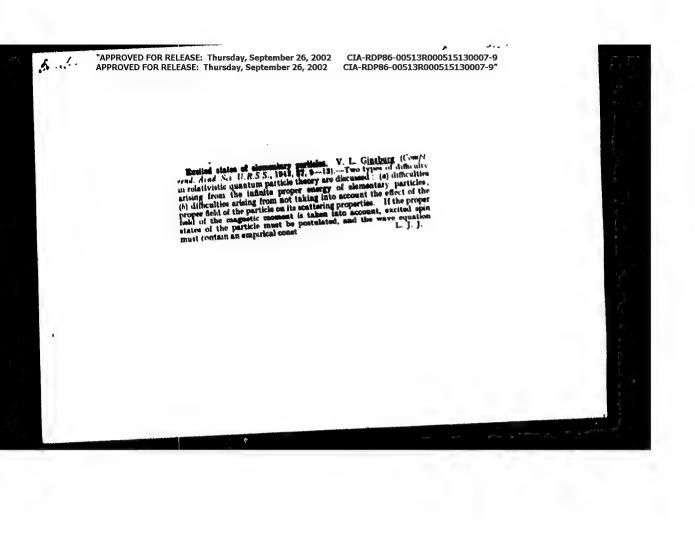
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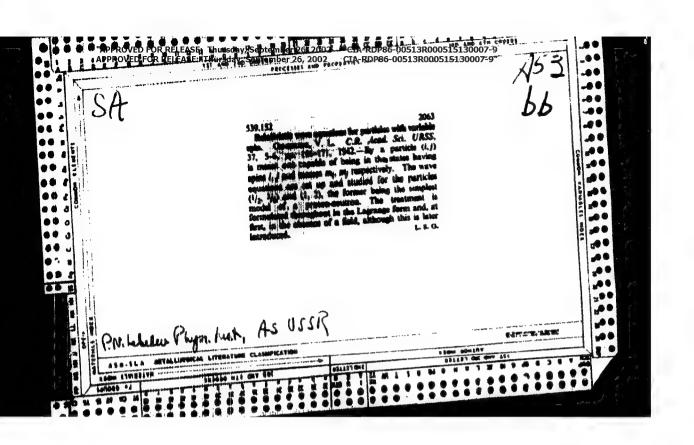
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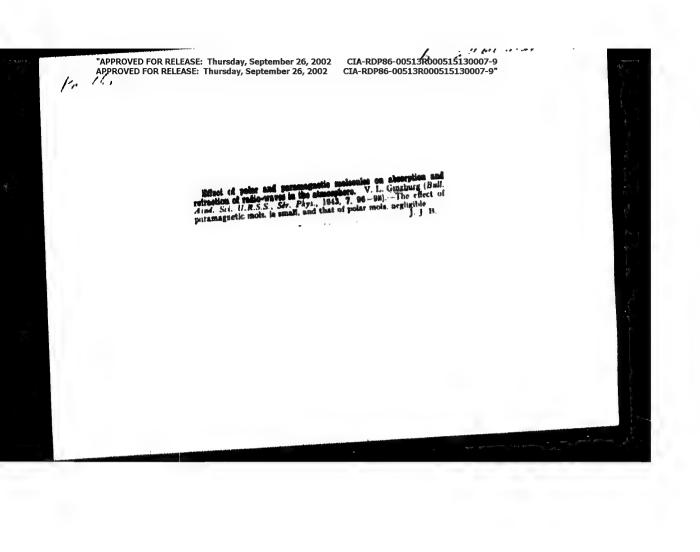
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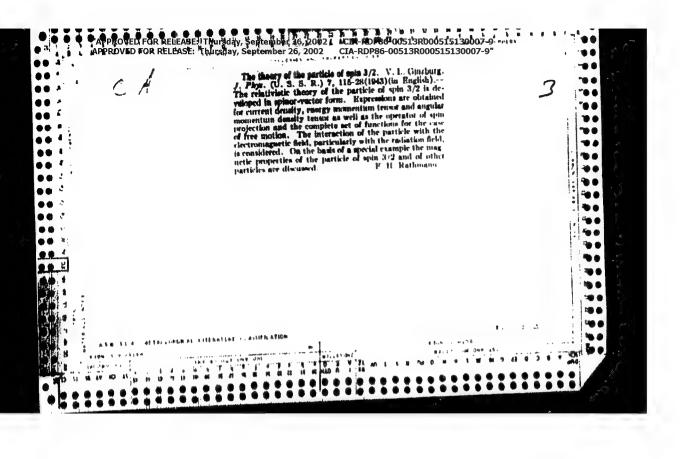
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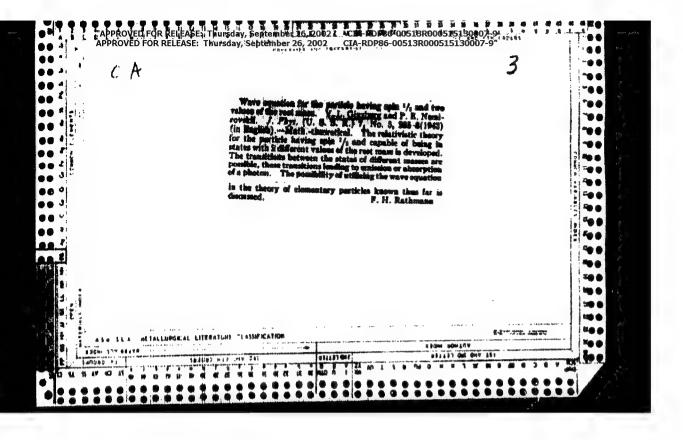


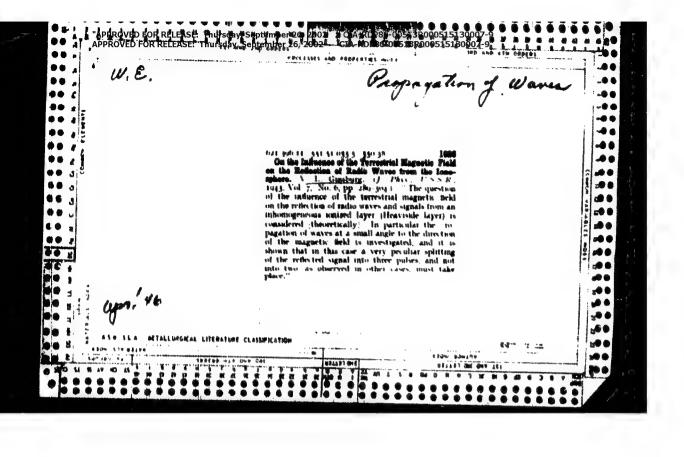


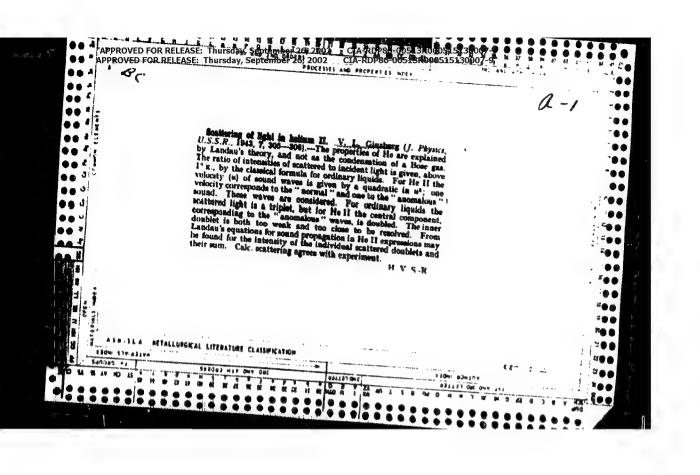


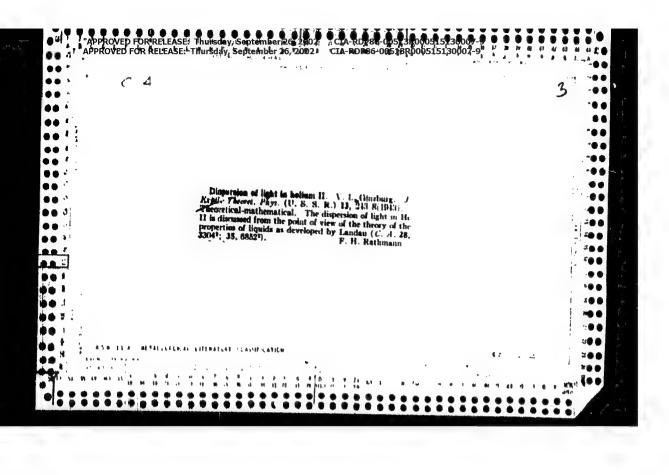




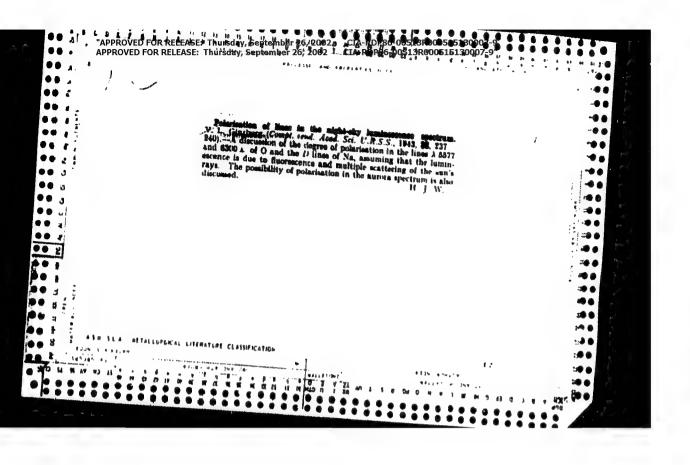








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O polyarizatsii liniy v spektre svecheniya nochnogo neba i v spektre polyarnykh siyaniy (On the Polarization of the Lines in the Spectrum of Night Sky Luminescence and in the Auroral Spectrum). Akademiya Nauk SSSR. Doklady, 1943, v. 38, no. 8, p. 266-269.

Targing and the production of the production of

"On Secondary Light Scattering in the Atmosphere and on Polasization Anomalies During Twilight," Dokl. AN SSSR, 40, No.6, 1943

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nith Feb. 1933, 385, 4, pp. 158-131: all in English )

"On the Scattering of Light in Liquids," Dokl. AN ISSR, 42, No.4, 1943 P.M.Lebedev Physics Inst., AS, USSR

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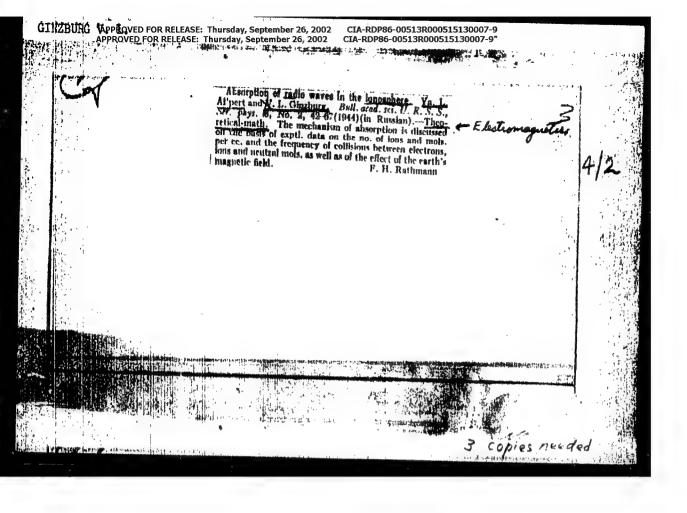
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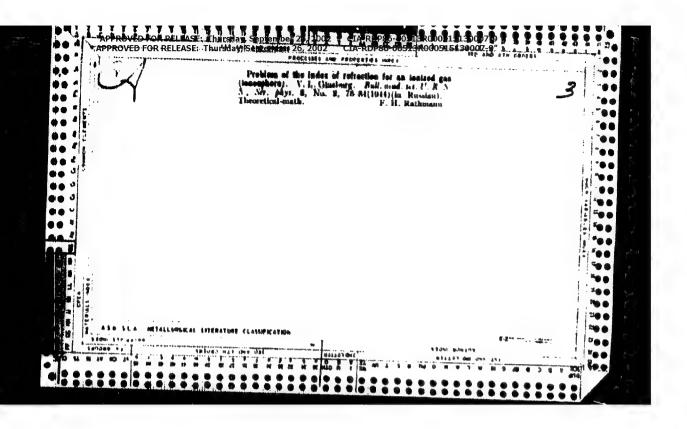
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APPROVED FOR RELEASE: Thursday, September 26, 2002
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515130007-9 CIA-RDP86-00513R000515130007-9" 3.10,145.6 On the wave equations for particles with variable spin.

Clustopad. Yo. ANII. REGEORGES 1. J. Phys.,

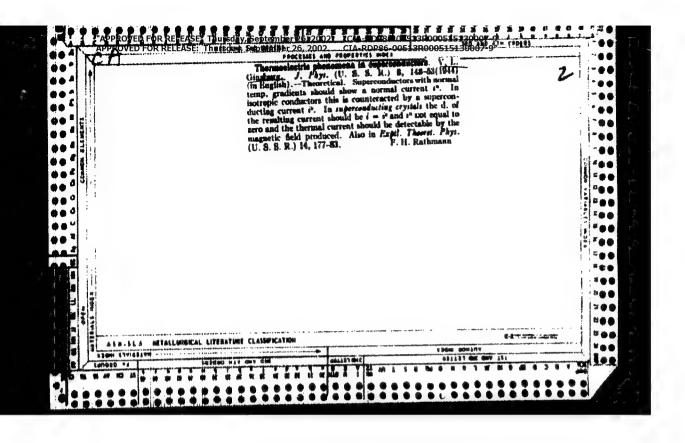
U.S.R. 5. 1, pp. 52-53, 1944.— By an (i, j) particle is meant one which can exist in states with spins l and J and with different values of the rest mass. The relativistic wave equations for such a particle, recently proposed by Ginaburg, are said to spilt up (if, by means of a certain transformation of the wave if, by means of a certain transformation of the wave If, by means of a certain transformation of the wave functions, they reduce to a system of equations for a particle with the spin J and for a particle with the spin J, which are independent of each other. It is shown that the equations for a (0, 1) particle and for a (\frac{1}{2}, \frac{1}{2}) particle olways split up in the absence of a field and also in the case of a certain type of interaction with an electromagnetic field. The equations for a (1, 2) particle are also separable in the absence of a field, but this is not the case for a (\frac{1}{2}, \frac{3}{2}) particle.





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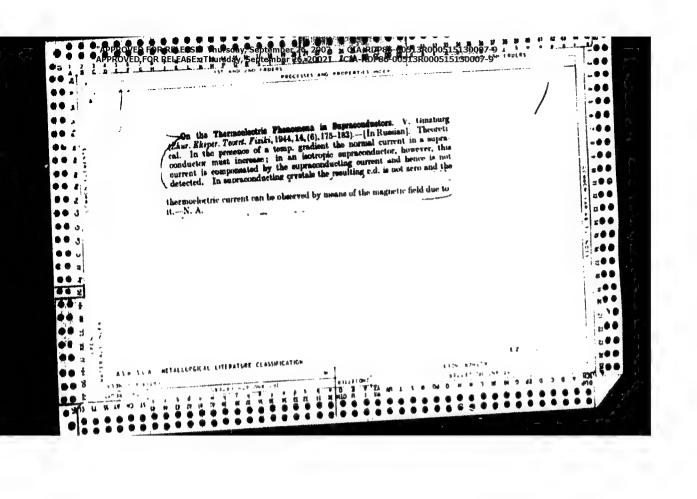
On the Absorption of Radio Waves and the Humber of Collisions in the Incompare of Assimbliation 4f. Phys. (2.85 R., 1944, Vol. 8, No. 3, pp. 251-246). The measurement of the absorption of tadio waves in the ionosphere enables our to determine the effective number of collisions in some of its regions. On the other hand, it is possible with the help of the usual method of kinetic equation to evaluate the number of collisions effective for the process of absorption of radio waves. Both the evaluate the number of collisions with the isodecules and their collisions with the isodecules and their collisions with the ions can be thus calculated. The cross methon for the latter process under conditions prevailing in the ionisphere is about a million times larger than for collisions with the molecules. In this comeanin the concentration of ions and molecules in the ionisphere, as derived from radio measurements, is dimensed.

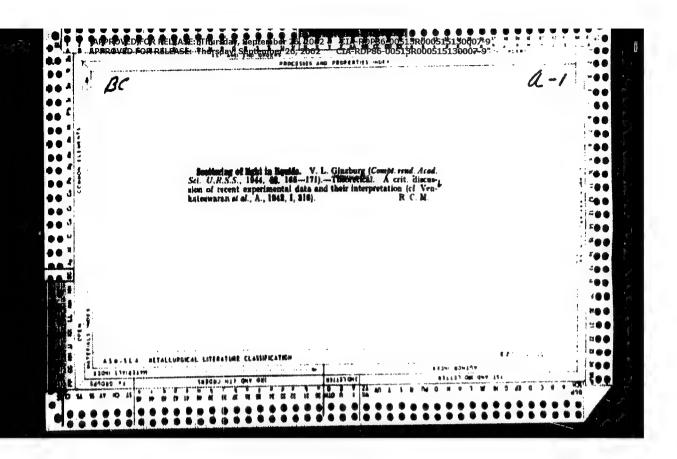


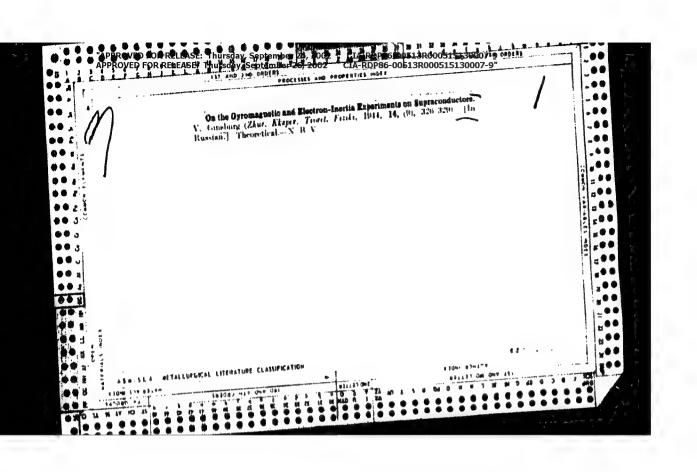
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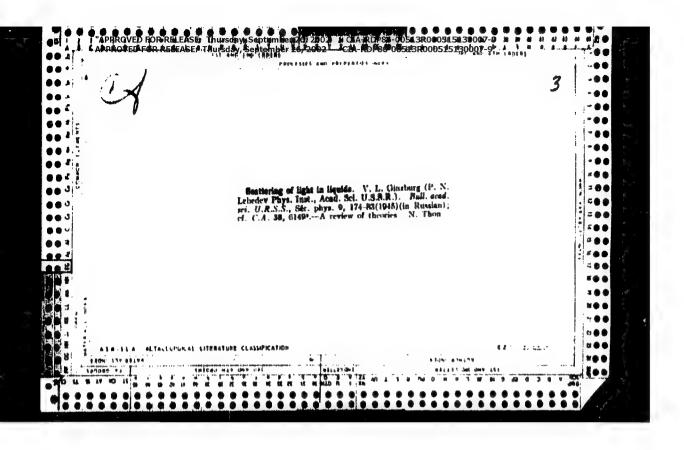
"Optical Method for the Investigation of Stresses," Zhur. Tekh. Fiz., 14, No.3, 1944

Physical Instl im. Lebedev, AS USSR



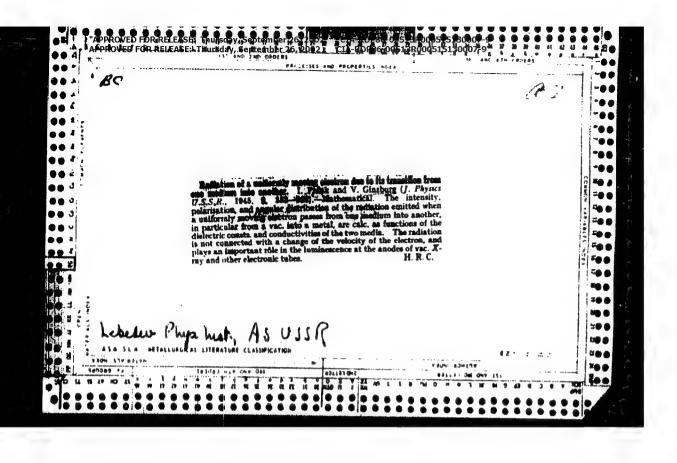






ON THE SURFACE ENERGY AND THE BEHAVIOUR OF SUPRACONDUCTORS OF SMALL DI\*
MENSIONA. Varginsburg (J. Physics (U.S.S.R.), 1945, 9, (4), 305-311)
(In English.) Theoretical. The depth of penetration of a magnetic field into a supraconductor is discussed, and the offect of the surface energy at the boundary between a supraconductor and a vacuum or a metal in the normal state is stressed. The pointed out that bad agreement between the previous theories and the measured values of the critical fields for supraconduction films and madsive specimens is due to neglect of the surface-energy factor. The relation between the critical field and the thickness of the film is developed taking this factor into account, and gair agreement with experiment is abtained. GVR.

SHISLA BETALLUNGICAL LITERATURE CLASSIFICATION



United States Constants

1945

"The Distances Properties of Crystals of Beignetto-electric Substances and of Barium Titanate," V. Ging-burg, Institute of Physics Incal P. N. Lebedev, Acade may of Sciences of the USER, 10 pp

"Zhur Ensper 1 Teor Fiz" Vol IV, 739-49

Review of previous work on the behavior of the di-electric sometant around the Carle point. Article is reprinted in the Journal of Physics of the USSR, Vol. I, 107-15.

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"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515130007-9"
Superconductivity
Moskva, I?d-vo Akademii nauk SSSR, 1946, 204 p.
(Akademiia nauk Soiuza SSR, Nauchno-populiarnaia seriia)

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GINZBURG, "Approved For Release: Thursday, September 26, 2002 APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515130007-9"

"Theory of the Propagation of Radiowaves in the Ionosphere". Uspekhi Fiz Nauk, No 2-3. 1946 (155-201). (Neteorologiya i Gidrologiya, No 6 Nov/Dec 1947)

SO: U-3218, 3 Apr 1953

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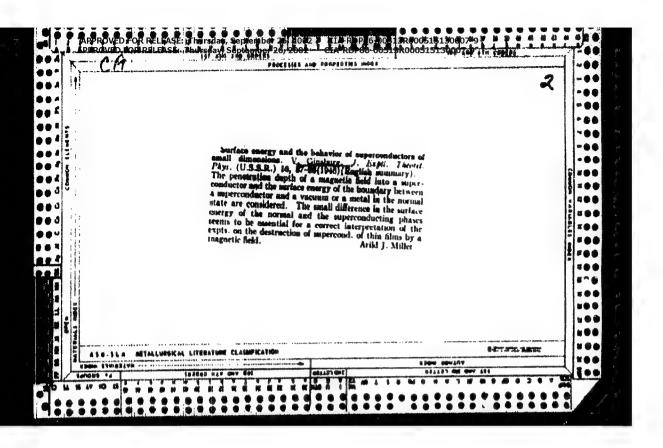
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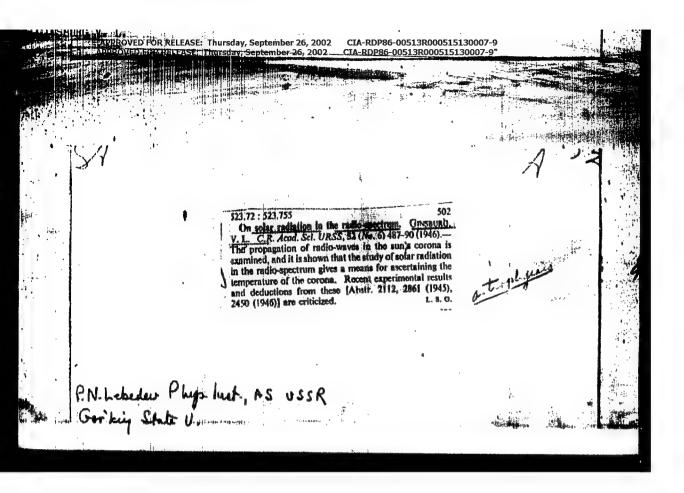
HIS. ON THE DIELECTRIC PROPERTIES OF FERROELECTRIC CRYSTALS AND BARIUM TITANATE.—V. Ginebare II. Physics, U.S.S.R., 18, No. 2, 107, 1946). The properties of ferroelectric crystals and of barium titanata are discussed in connection with the thermodynamical consideration of a phase transition from a non-pyroelectrical listo a pyroelectrical crystal. Experimental data show that transition in ferroelectric crystals is really of the continuous type, the value of a reading to infinity by approaching the Curie point from either side of this point Helow the transition point (where T<0) the behaviour of ferroelectric crystals is complicated, as they spit into domains the dimensions of which are determined by the condition of the minimum from energy. It is a physical productry of these sebstances that reversal of the direction of polarisation may be attained in comparatively weak fields which do not exceed a few thousand volt./cm. The characteristic spiliting lato domains at a given temperature and the physical properties of forroelectric crystals are determined by the shape of the specimen and the conditions on its boundaries. The problem of esturation, however, remains ambiguous. The large value for else lattion of the puroushite type accounts for the presence of a small value of Born's frequency, i.e. a certain "lossesses "of the lattice, which increases with increasing weight of the metal producing the titanate, and is especially great in the case of Bn, thus contributing to the apparance of pyro-modification. The properties of symmetry of this lattice exclude the possibility of pyro- and piezo-electric phenomena. In Brillo, the Curis point is simultaneously the transition point of a non-piezosiscieric into a piezosisciric state. With such transition there should also occur cristitational twinning rendering the whole crystal non-piezosiciric. This is known to happen at 573°C, when the transition to a quarte take place, its modulus bring sure, but unfortunately the phase transition in quarte is of the first type in wh

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515130007-9 CIA-RDP86-00513R000515130007-9"

"On Nuclear Scattering of Mesotrons," Zhur. Fiz., 10, No.3, 1946

Lebedev Phys. Inst., AS USSR





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Jan 1947

Superconductivity Electromagnetica

"On the Monlinearity of Electromagnetic Processes in Superconductors," V. Ginsburg, Institute of Physics impni P. N. Lebedev, Academy of Sciences of the USER, 1 p

"Journal of Physics" Vol XI, No 1

A general discussion is given of the relationship between the number of electrons n and velocity v in a superconductor and of the equation for the penetration depth d in terms of n,v,c,e, and m. USER/Radio Waves - Absorption Radio waves - Propagation SHP Feb 1947

"On the Maission of Microradio Waves and Their Absorption in the Air," V. L. Ginsburg, 18 pp

"Izv Ak Nauk Fiz" Vol XI, No 2

Analysis of new methods for generating microradio waves of less than 1-om wave-length, and discussion of the absorption of miororadio waves in air.

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Behavior of lerromagnetic substances in the vicinity of the Circle point. V. L. Chieburg (Acad. Sci. U.S.S.R., Moscard.). Zhur. Ekspii. Teard. Fig. 17, 833-61047). Since the Terromagnetic transition near the Curic point  $\theta$  is a phase transition of the 2nd kind (i.e. without latent beat and with a discontinuous change of the heat capacity), it can be treated in analogy to the previous treatment of the seignetto-elec. transition (cf. C.A. 40, 5968). This treatment is free from the arbitrary assumptions underlying the theory of Webs. From the condition of nin. of the thermodynamic potential, the spontaneous unagnetication  $M_t$  at  $T \leq \theta$  is  $M_t^2 \approx -n/\beta \approx -n/\beta$  ( $T = \theta = 0$ )  $M_t = 0$ , where  $\alpha$  and  $\beta$  are functions of the pressure  $\beta$  and of  $T_t$   $\alpha_t = (0\alpha/\delta T)_T = \theta$ ;  $\theta_t = \theta(\theta, \theta)$ ; and  $dM_t^2/dT = \alpha_t^2/\theta_t$ . In the presence of a field  $H = 2\alpha M + 2\beta M_t^2$  ( $\partial M/\partial H$ ) =  $1/(2\alpha + 6\beta M_t^2)$ , and the initial susceptibility  $X_t$  near the Curic point  $X \approx 1/2\alpha_t^2$  ( $T = \theta$ ) or X = 1/4  $\alpha_t^2(\theta - T)$ , at  $T > \theta$  or  $T < \theta$ , resp., i.e. at the same  $|T = \theta|$ , the susceptibility in the ferromagnetic range is half that in the paramagnetic range. For the heat capacity  $C_M$  (at const. M) at  $T > \theta$ ,  $C_M T = T\alpha'd(M') = (T/2)(d(1/X)/dT)d(M')$ , and, in the vicinity of the Curic point in a weak field (both at  $T > \theta$  and  $T < \theta$ )  $C_M T = T\alpha'd(M')$ . Contrary to the Weiss theory, this formula is valid only in the vicinity of  $\theta$ ; farther from  $\theta$ ,

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the magnitude  $\alpha_{\theta}'$  depends on T. Consequently,  $\alpha_{\theta}'$  can be detd, only from the slope of 1/x in close vicinity  $\theta_{\phi}$ . N. Then

Physics Inst. im. P.N. Lebeden, AN 355 R.

Creation of mesotrons and "stars" in cosmic rays V. L. Ginsbugg. Zhar. Edipel. Temel. Fig. 17, 943–4(1947); cf. Alikhanyan, et al., C.A. 41, (1943). A comparison of the preduction of mesotrons and "stars" indicates that they are generated by the anne neutral components of cosmic rays. The no. of "stars" is also nearly the no. of acts of creation of mesotrons per unit time.

Physics Inst. im. P.N. Lebedev, AN SSSR.

1307. Theory of Memotrons and Nuclear Force, by V. L. Ginzburg, Uspekhi Fizichestikh Mauk 31, No. 2, April 1947. 36 p. (In Russian)

This article is divided into four main sections: Introduction, the wave equations for seasofroms, nuclear force, and difficulties which arise from the present theories. Under the section on wave equations for mesotrons, the author discusses the relation of mesotrons to electromagnetic poles.

GINSBURG APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515130007-9 CIA-RDP86-00513R000515130007-9

"Solar and Galactic Radium Radiation," Usp. Fiz. Nauk, 32, No.1, 1947

Apr 1947

The Radiation of an Electron Moving near a Dielec-trie," V. L. Ginzburg, 4 pp

"Doklady Akademii Nemk 8388" Vol LVI, No 2

The author shows the possibility of obtaining the same radiation effect from nonrelativistic waves as relativistic waves moving in the field of a distantion.

